MEMO

To: Chip Humphrey, Remedial Project Manager;
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Environmental Protection Agency, Region 10

From: Karl Gustavson, US Army Engineer Research and Development Center

Date: 23 July 2012

Subject: Major Comments on March 30, 2012 Draft Feasibility Study

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This memo provides support to the Agency FS team in its compilation of comments and issues on the Draft FS. Per direction, the following provides several "big picture" issues and areas that are supported in the FS. Note that some comments have other ERDC personnel names. These will be transmitted when received.

Primary Issues:

Excessive framing and focus on site-wide phenomena. There is an excessive focus on sitewide phenomena such as deposition and contamination. Actions will not occur sitewide, contaminant sources and types are not homogeneous sitewide, and most exposures are not sitewide, yet the FS frequently focuses analyses and presents conclusions at the sitewide scale. For example, "the site is depositional" is frequently repeated. That assertion is not relevant or helpful to management at individual areas, where management will occur.

Sitewide evaluations of cleanup approaches combine large expanses of clean areas with relatively contaminated areas into evaluations that establish remediation areas. Aggregating to those exposure areas (i.e., sitewide, segment-wide, or to the river mile) is not environmentally or biologically relevant and effectively dilutes the appearance of risk and unacceptable exposures. The FS analyses should focus on contaminated areas and exposure areas where exposures require management, not sitewide.
Sitewide evaluations are useful as a secondary depiction; perhaps as a series of figures buried in an appendix, but they are generally not useful for describing impacts and effectiveness at relevant spatial scales of concern, or environmental phenomena such as deposition.

Reliance on uncertain (and seemingly excessive) MNR processes to achieve protectiveness [Earl]
Release predictions are excessive: An estimate of 3% release of material at 100% soluble is excessive. [Paul]

The use of engineering controls to lessen releases from dredging should not be screened out, rather employed judiciously in areas of high contaminant concentrations in conducive environments [Paul].

Exposure of subsurface contamination. "Expected changes in surface sediment concentrations due to river current erosion are relatively small and short in duration and, under the no action alternative, do not substantially alter the course of natural recovery as generally observed at the Site. There does not appear to be a need to identify any new areas of currently buried contamination that would have substantial

impact on surface sediment concentrations. The extent to which any such erosion is expected to occur is fully integrated into and accounted for in the long-term surface sediment modeling results presented in Sections 6 and 8. Therefore, the importance, or lack thereof, of this process in terms of remedy success can be fully assessed via evaluation of the model results."

Subsurface contamination requires serious consideration to evaluate its potential to pose unacceptable risk in the future and ultimately to determine cleanup areas and remedial technologies. Analysis of the extent and magnitude of potential exposures to these materials should not be relegated "fully" to and then dismissed by the sediment modeling (particularly modeling approaches that do not account for the impact of bed morphology 576962926 changes on deposition rates over time). At a minimum, exposed concentrations immediately following the 100 yr event should be depicted; to bracket these results, the 100 year event should also be run at yr 0 and results presented. Areas of subsurface erosion

Selection of specific technologies within integrated alternatives. It is unclear how specific technologies were designated for individual sub-SMAs. Descriptions in section 5-4 and technologies table 7.2-1 are somewhat helpful, but it does not make clear which remedies will be applied for what reason or under what conditions. If this material is in an Appendix somewhere, it should be brought forward as it is fundamental to evaluating alternatives. The lack of consideration of environmental conditions for selecting some remedies is disconcerting. For example, it appears that in-situ treatment is designated for open water areas without consideration of sediment slope or water flows. Language in Chapter 7 seems to relate that all integrated remedies would be interchangaeble. A new table or figure should be developed that clearly depicts the decision tree for determining which remedies are applied in which areas for what reason. The text should further explain and support this process. At present, the presentation of this fundamental component of the FS is unclear and inadequate. If it's not relevant or necessary to designate specific remedies among the "I" alternatives, this should be described in a clearer fashion than the text presented on p 7-4.

Use of uncertainty and sensitivity evaluations. The uncertainty evaluation included in the FS are summarized in Chapter 10. The take home message is "The reliability of the MNR technology was evaluated through an uncertainty analysis (Appendix U, Section 5). This evaluation indicated that the natural recovery and modeling uncertainties are small compared to the RG and SMA uncertainties (Figure 10.2-1)."

This type of comparison is not scientifically credible. A calibration constrained sensitivity analysis does not represent the uncertainty of a model's predictions for depicting environmental conditions; it represents the variation seen in model results when a few select parameters are varied. Subsequent comparisons to the range of potential remedial goals and the assertion that the comparisons have meaning are not appropriate.

Supported Approaches:

Two approaches that I think were useful in developing the FS were:

-focus on refined list of PRGs.

-use of RALs to define remediation areas on the basis of wider exposure areas.